

(11) Publication Number: H02-204417

(43) Date of Publication of Application: August 14, 1990

(51) Int. Cl.⁵

A 61 K 35/78

5 A 23 L 03/3472

A 61 K 07/00

A 61 K 35/78

C 07 G 17/00

C 09 K 15/08

10 (21) Application Number: H01-022565

(22) Application Date: February 2, 1989

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15 (Claim)

A hydrophobic licorice flavonoid preparation comprising a hydrophobic licorice flavonoid and a medium-chain fatty acid triglyceride.

20 (Example 1)

5 parts by weight of a typical hydrophobic licorice flavonoid was mixed with 95 parts by weight of a medium-chain fatty acid triglyceride (Nisshin ODO-L, product of Nisshin Oil Mills LTD.) and then stirred for 30 minutes, and the state after
25 standing for 24 hours was observed.

On the other hand, the same testing was carried out on typical plant flavonoids to observe the solubility state.

The results obtained are shown in Table 1.

[Table 1]

Flavonoids	State after 24 hours
Hydrophobic licorice flavonoids	
Licochalcone A	Soluble
Echinatine	Soluble
Grabron	Soluble

Glycycomarin	soluble
Licocoumarin	soluble
Grabrene	soluble
Grabridin	soluble
Lycoricidine	soluble
Other plant flavonoids	
Quercetin	insoluble
Rutin	insoluble
Kaempferol	insoluble
Epigallocatechin gallate	insoluble
Epigallocatechin	insoluble

(Example 2)

As for a crude hydrophobic licorice flavonoid (flavonoid content: about 30-40%) extracted from homogenated licorice roots using methylene chloride, its solubilities in COCONARD MT (product of Kao Food Co., Ltd.) which is a medium-chain fatty acid triglyceride, and in other triglycerides were tested.

The results obtained are shown in Table 2.

[Table 2]

Species of triglyceride	Concentration (% by weight) of hydrophobic licorice flavonoid	Solubility
COCONARD MT	5	soluble
COCONARD MT	30	soluble
COCONARD MT	50	soluble
Soybean oil	5	insoluble
Rapeseed oil	5	insoluble
Rice oil	5	insoluble

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(Example 3)

A extract from homogenated licorice roots with ethanol as an extracting solvent was purified using an adsorption resin or the like to give a purified extract with a hydrophobic licorice flavonoid content of about 50%. Emulsions A, B and

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C were subsequently prepared therefrom in the following formulations.

	<u>A</u>	<u>B</u>	<u>C</u>
Purified licorice extract	5.0	5.0	5.0
Enzyme-treated lecithin	0.5	0.5	0.5
Decaglyceryl monostearate	1.6	1.6	1.6
Quillaja saponin preparation	0.7	0.7	0.7
Isomerized liquid sugar	3.7	3.7	3.7
Medium-chain fatty acid triglyceride	2.5		
Oleic acid monoglyceride		2.5	
Ethanol			2.5

To 14 parts of each of the emulsions obtained was added
5 86 parts of dextrin and then mixed, dried and powdered.

The obtained powder of emulsion was dissolved in an amount
of 0.5% in 5% brine and, after 16 hours of standing, the emulsion
or dispersion state was observed. The results obtained are
shown in Table 3, in which it was found that Preparation A
10 according to the present invention which comprises a
medium-chain fatty acid triglyceride exhibits excellent
stability without causing demulsification.

[Table 3]

<u>Emulsion</u>	<u>Emulsion or Dispersion state</u>
A	good
B	not good (being separated)
C	not good (being precipitated)

15 (Example 4)

The extract used in Example 2 was dissolved in an amount
of 10% by weight in a medium-chain fatty acid triglyceride:
Nisshin ODO-L (product of Nisshin Oil Mills LTD.). On the other
hand, as a comparative example, the same extract as above was
20 dissolved in an amount of 10% by weight in oleic acid
monoglyceride (OMG). These solutions were stored at 7°C and

at 0°C, and the state of each preparations was observed. The results obtained are shown in Table 4.

[Table 4]

Storage temperature	Solvent	State	
		after 1day	after 6 months
7°C	Nisshin ODO-L	liquid	liquid
7°C	OMG	liquid	solidified
0°C	Nisshin ODO-L	liquid	liquid
0°C	OMG	solidified	solidified